## What is Claimed is:

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- 1. A lens system for use in a projection system for relaying light output from a first imager on a pixel-by pixel basis onto a second imager, the lens system comprising a double gauss lens set having a distortion of less than about 0.015% with at least about 90% of the light energy of a specific pixel projected within a 15.4 micrometer square.
- 2. The lens system of claim 1 wherein said double gauss lens set has a magnification of between about -0.9997 and -1.0003.
- 3. The lens system of claim 1 wherein said double gauss lens set has a telecentricity with an input and output angle deviation of less than 1.05 degrees.
- 4. The lens system of claim 3 wherein said double gauss lens set has a telecentricity with an input angle deviation of less than 1.03 degrees and an output angle deviation of less than 1.0 degrees.
  - 5. The lens system of claim 3 wherein said double gauss lens set consists of a pair of symmetrical aspherical lenses surrounding a pair of symmetrical acromatic lenses.
- 15 6. The lens system of claim 5 wherein said acromatic lenses comprise optical glass.
  - 7. The lens system of claim 1 wherein the total distance between the first and second imagers is less than 165 mm.
- 8. The lens system of claim 1 wherein the total distance between the first and second imagers is about 161.25 mm.
  - 9. The lens system of claim 1 wherein the double gauss lens set has an F-number no greater than about 2.8.
  - 10. An imager to imager relay lens system for use in a projection system, comprising a lens set consisting of one pair of equivalent acromatic lenses and one pair of

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equivalent aspherical lenses positioned and configured to project the light output from a particular pixel on a first imager onto a corresponding pixel on a second imager.

- 11. The imager to imager relay lens system of claim 10 wherein the total distortion of said relay lens system is less than about 0.015% with at least about 90% of the light energy of a specific pixel projected within a 15.4 micrometer square, said relay lens system further having a magnification of between about -0.9997 and -1.0003.
- 12. The imager to imager relay lens system of claim 10 wherein said lens set has a telecentricity with an input and output angle deviation of less than 1.05 degrees.
- 13. The imager to imager relay lens system of claim 12 wherein said lens set has a telecentricity with an input angle deviation of less than 1.03 degrees and an output angle deviation of less than 1.0 degrees.
  - 14. The imager to imager relay lens system of claim 10 wherein the total distance between the first and second imagers is less than 165 mm.
- 15. The imager to imager relay lens system of claim 10 wherein the total distance between the first and second imagers is about 161.25 mm.
  - 16. The imager to imager relay lens system of claim 10 wherein the lens set has an F-number no greater than about 2.8.

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